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囊螨属五新种记述 (蜱螨亚纲, 中气门目, 胭螨科)

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摘 要 记述囊螨属5新种:山东囊螨 *Asca shandongensis* Ma et Lin, sp. nov., 福建囊螨 *Asca fujianensis* Ma et Lin, sp. nov., 云南囊螨 *Asca yunnanensis* Ma et Zhang, sp. nov., 海南囊螨 *Asca hainanensis* Ma et Lin, sp. nov. 和拟云囊螨 *Asca imitonubes* Ma et Lin, sp. nov.。

关键词 蜱螨亚纲, 中气门目, 胭螨科, 囊螨属, 新种.
中图分类号 Q959.226

囊螨属 *Asca* V. Heyden 广布于全世界, 种类繁多。国内已记载23种, 从南到北, 从东到西, 到处都有该属的分布。新的种类正在继续发现, 本文记述5新种。文中测量单位为μm, 括号内为测量均值。模式标本保存于军事医学科学院微生物流行病研究所昆虫标本馆, 北京。

1 山东囊螨, 新种 *Asca shandongensis* Ma et Lin, sp. nov. (图1～5)

雌螨 体黄色。二背板侧缘波浪形。前背板长169～184 (174), 宽158～176 (169), 刚毛17对, 叶状, 光滑或有小刺, 侧面观呈镰状。后背板长161～176 (172), 宽169～188 (178); 刚毛15对, 叶状, 边缘有小刺, 侧面观呈镰状; D_5和D_6较短, 末端达不到下位毛基部, D_7和D_8较长, D_7末端达到D_8基部, D_8末端远离M_{11}基部; S_8极短, 刺形; M_{11}狭长; 后侧突上有刚毛2根, 微宽弧形, 光滑。背表皮毛10对左右, 叶状, 小于背板毛。胸板和生殖板骨化很弱, 胸板长 (自St_1基部水平) 75, 最狭处宽56, 刚毛3对。胸后毛在表皮上。生殖板长56, 后端宽45, 刚毛1对。腹肛板横椭圆形, 长113～120 (116), 宽161～188 (175), 除围肛毛外有刚毛6对,

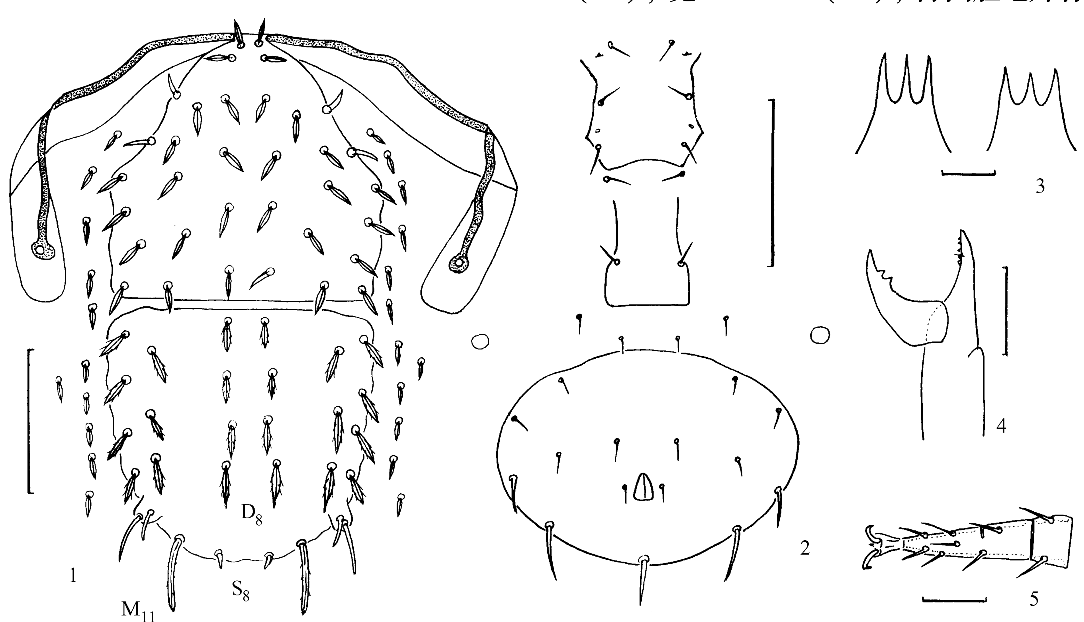


图1～5 山东囊螨, 新种 *Asca shandongensis* Ma et Lin, sp. nov. ♀
1. 背面 (dorsum) 2. 腹面 (venter) 3. 头盖 (tectum) 4. 螯钳 (chela) 5. 跗节 II (tarsus II) 比例尺 (scale bars): 1～2 = 100 μm, 3～5 = 20 μm

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后 2 对较长。Ad 位于肛孔中横线水平, 短于肛孔, PA 粗长。腹肛板前方表皮有刚毛 2 对。足后板 1 对, 圆形。气门沟前端达到 F_1 基部。头盖 3 突。螯钳动趾 2 齿, 定趾有 4～5 个小齿。颚毛短而光滑, 叉毛 2 叉。足毛短小。

雄螨: 未知。

词源: 新种以模式标本采集省份命名。

鉴别特征　新种类似于中华囊螨 *Asca sinica* Bai et Gu, 1992, 但新种 M_{11} 远长于 S_7, 仅 S_7 呈叶状; 后侧突刚毛光滑。而中华囊螨 M_{11} 与 S_7 约等长, 均呈叶状; 后侧突刚毛有小刺。

正模　♀, 副模 3 ♀♀, 采自苔藓, 山东莱芜马庄, 2005-09-16, 林坚贞采。

2　福建囊螨, 新种 *Asca fujianensis* Ma et Lin, sp. nov. (图 6～8)

雌螨　体浅黄色, 椭圆形, 长 274, 宽 161。前背板长 139, 宽 131, 刚毛 17 对, 较短微宽, 弧形, 光滑。后背板长 131, 宽 131; 刚毛 15 对, 微宽; D_5 和 D_6 末端达不到下位毛基部, D_7 末端达到 D_8 基部, D_8 很长, 密布短绒毛; S_8 较长, 中段膨大, 有羽枝; 其余毛光滑, 个别长毛有稀羽枝; 侧毛由前向后逐次变长, 后侧突上具 2 根毛。背表皮毛 10 对。胸板长 71, 最狭处宽 49, 前缘中部内凹, 胸毛 3 对。胸后毛在板后表皮上。生殖板长 64, 后端宽 49, 生殖毛 1 对。腹肛板近圆形, 长 94, 宽 131, 板面具横纹, 除围肛毛外有刚毛 6 对, 前部 4 对微小, 短于胸毛和生殖毛, 后 2 对稍长。Ad 位于肛孔中横线水平, 短于肛孔, PA 约等于肛孔长, 较 粗。生殖板与腹肛板之间表皮上有刚毛 2 对, 微小。足后板 2 对, 外侧 1 对大, 近半圆形, 内侧 1 对小, 圆形。气门沟前端达到 F_1 基部。颚毛短而光滑, 叉毛 2 叉。足毛短小。

雄螨: 未知。

词源: 新种以模式标本采集省份命名。

鉴别特征　新种类似于 *Asca kosungensis* Lee, Lee et Ryu, 1997, 但新种背毛微宽弧形, 多数光滑; 而后种背毛柳叶状, 均有小刺。

正模　♀, 采自落叶, 福建三明莘口, 2005-10-15, 林坚贞采。副模 1 ♀, 采自苔藓, 福建霞浦柏洋, 2006-09-17, 林坚贞采。

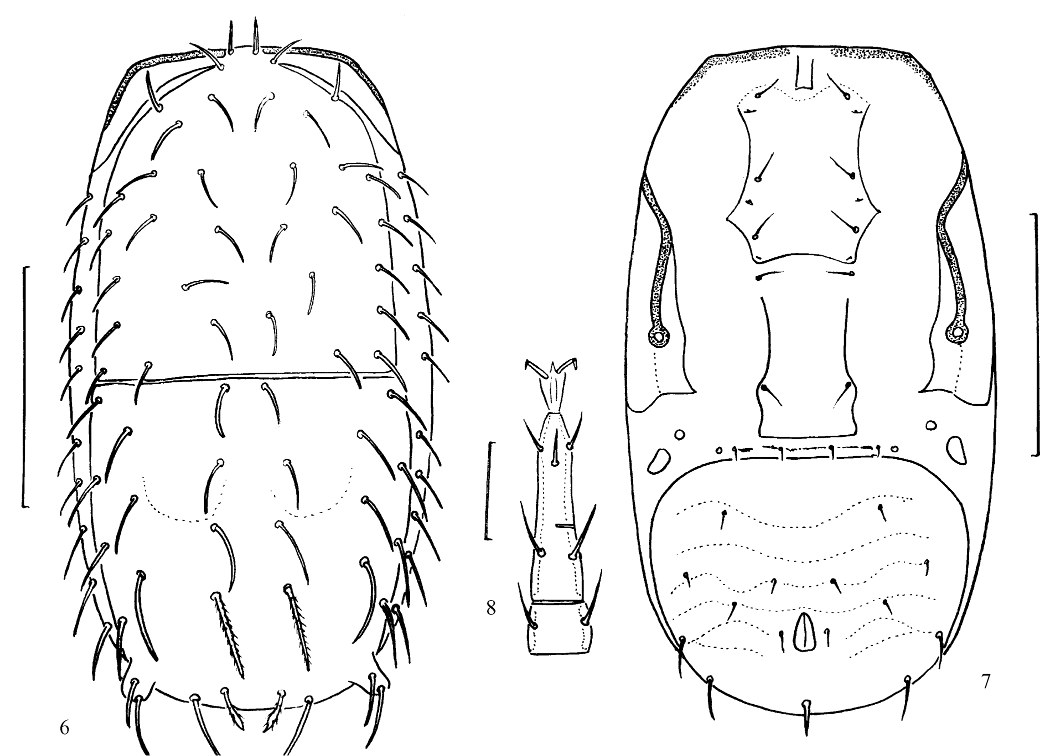


图 6～8　福建囊螨, 新种 *Asca fujianensis* Ma et Lin, sp. nov., ♀
6. 背面 (dorsum)　7. 腹面 (venter)　8. 跗节 Ⅱ (tarsus Ⅱ)　比例尺 (scale bars): 6～7 = 100 μm, 8 = 20 μm

3　云南囊螨, 新种 *Asca yunnanensis* Ma et Zhang, sp. nov. (图 9～13)

雌螨　体黄色, 椭圆形, 长 360, 宽 244。前背板长 188, 宽 188; 刚毛 17 对, 短小, F_1 稀羽状, F_3 亦有少数羽枝, 其余毛光滑, 个别毛有 1～2 不明显小刺。后背板长 169, 宽 195; 刚毛 14 对, 中列毛光

滑，D_5很短，末端远离 D_6基部，D_6和 D_7末端接近下位毛基部，D_8较长，但末端仍远离 M_{11}基部；S_8微小而细；M_{11}最长；侧毛由前向后逐次变长，前侧缘 2 对毛具稀羽枝；后侧突上具 1 根毛，密布绒毛；其余侧毛光滑。背表皮毛 11 对，光滑，前部毛短，后部毛长。胸板长 86，最狭处宽 64，前缘骨化弱，胸毛 3 对。胸后毛在板后表皮上。生殖板长 94，后端宽 64，生殖毛 1 对。腹肛板横椭圆形，长 113，宽 191，除围肛毛外有刚毛 7 对，后 2 对较长。Ad 位于肛孔中横线水平，短于肛孔，PA 较 粗长。腹肛板之前表皮上有毛 1 对，位于生殖板后侧角外侧。足后板 2 对，外侧 1 对大，卵圆形，内侧 1 对小，圆形。气门沟前端达到 F_1基部。头盖 3 突。螯钳动趾 2 齿，定趾有几个小齿。颚毛短而光滑。叉毛 2 叉。足毛短小。

雄螨：未知。

词源：新种以模式标本采集省份命名。

鉴别特征 新种类似于似蚜囊螨 *Asca aphidioides* (Linnaeus, 1758)，但新种多数背毛光滑，腹肛板前缘凸，而似蚜囊螨全部背毛均羽状，腹肛板前缘直。

正模 ♀，采自苔藓，云南昆明滇池，2005-11-02，张艳璇采。副模 1 ♀，采自土壤，云南大理下关，2007-04-20，获赠标本。

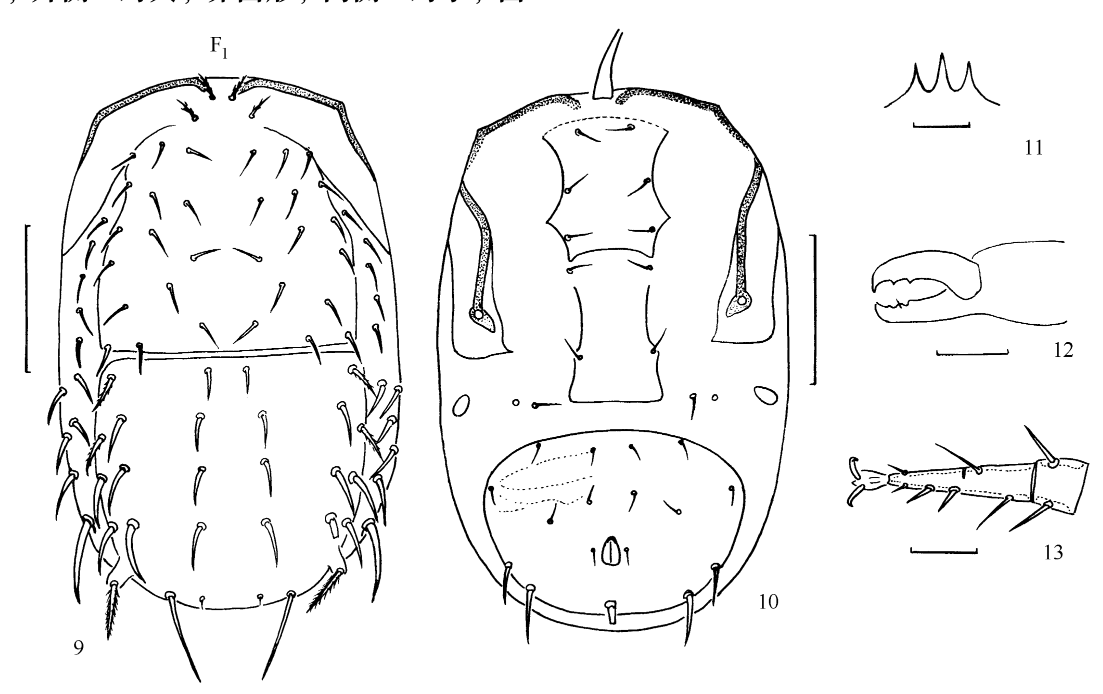


图 9～13 云南囊螨，新种 *Asca yunnanensis* Ma et Zhang, sp. nov.，♀
9. 背面 (dorsum) 10. 腹面 (venter) 11. 头盖 (tectum) 12. 螯钳 (chela) 13. 跗节 Ⅱ (tarsus Ⅱ) 比例尺 (scale bars)：9～10 = 100 μm，11～13 = 20 μm

4 海南囊螨，新种 *Asca hainanensis* **Ma et Lin, sp. nov.** (图 14～18)

雌螨 体黄色。二背板侧缘波浪形，板面有瘤状花饰。前背板长 161～169 (165)，宽 158～165 (161)，刚毛 17 对，短而光滑。后背板长 176～188 (182)，宽 180～184 (182)，刚毛 15 对，由前向后逐次变长，多光滑，个别粗长毛有少数小刺；D_5和 D_6末端达到与下位毛基部距离的中点，D_7末端接近 D_8基部，D_8长 30，较粗，末端约达到与板后缘距离的中点，有少数小刺，D_8间距 小于 D_8与 S_7间距；S_8较长，其长为 19；M_{11}很长；后侧突有毛 2 根。背表皮毛 11 对，短于背板毛，光滑。胸板长 (自 St_1 基部水平) 75，最狭处宽 64，有毛 3 对。胸后毛在板后表皮上。生殖板长 56，后端宽 45，侧缘较直，有刚毛 1 对。腹肛板横椭圆形，长 128～131 (129)，宽 169～184 (176)，有横纹，除围肛毛外有刚毛 6 对，后 2 对较长。Ad 位于肛孔中横线水平，短于肛孔，PA 较 长。生殖板与腹肛板之间表皮上有刚毛 2 对。足后板 1 对，圆形。气门沟前端达到 F_1 基部。头盖 3 突。螯钳动趾 2 齿，定趾有 4～5 个小齿。颚毛短而光滑。足毛短小。

雄螨：未知。

词源：新种以模式标本采集省份命名。

鉴别特征 新种类似于植囊螨 *Asca plantaria* Ma, 1996，但新种背毛 D_8 间距 小于 D_8与 S_7间距，生殖板侧缘较直；而植囊螨 D_8 间距大于 D_8 与 S_7间距，

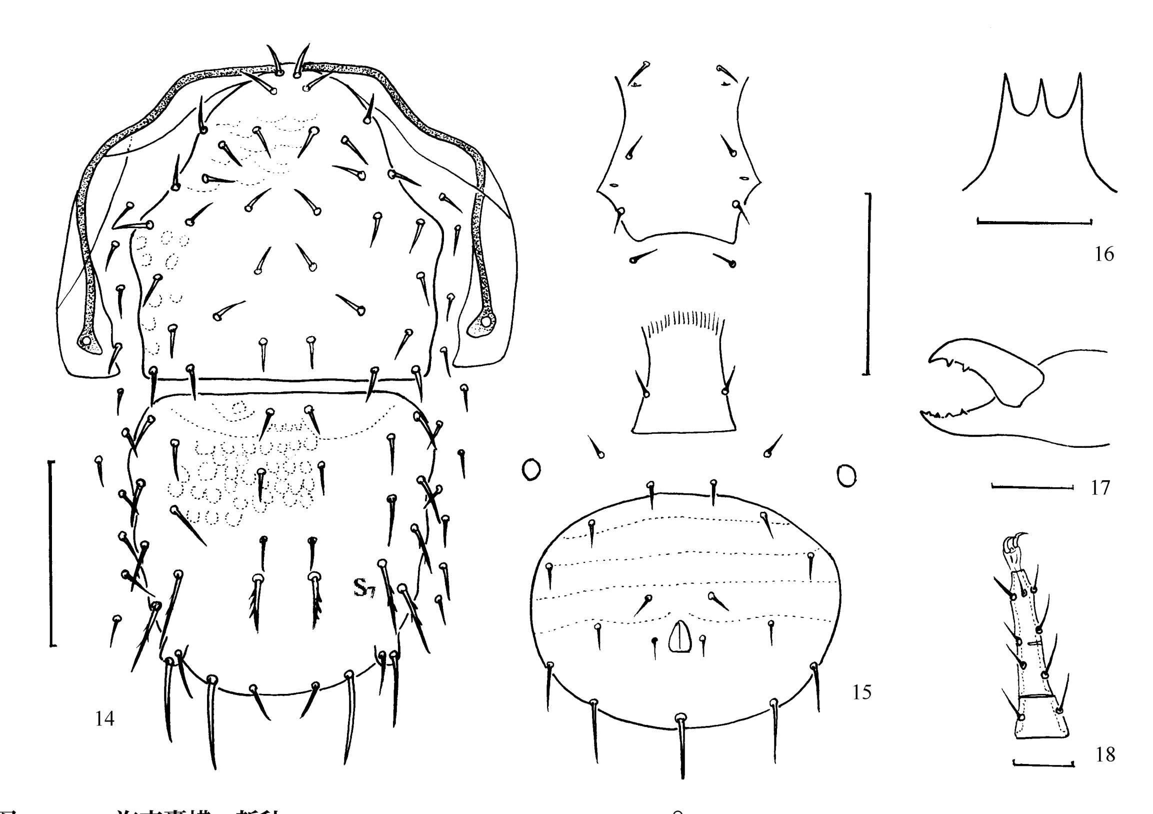


图 14～18　海南囊螨，新种 Asca hainanensis Ma et Lin, sp. nov., ♀
14. 背面（dorsum）　15. 腹面（venter）　16. 头盖（tectum）　17. 螯钳（chela）　18. 跗节 Ⅱ（tarsus Ⅱ）　比例尺（scale bars）：14～15 = 100 μm，16～18 = 20 μm

生殖板侧缘在生殖毛之后有缺刻。

正模 ♀，副模 1 ♀，采自落叶，海南万宁东山岭，2005-08-10，林坚贞采。

5　拟云囊螨，新种 Asca imitonubes Ma et Lin，sp. nov.（图 19～24）

雌螨　体黄色，椭圆形，长 319，宽 206。前背板长 158，宽 158；刚毛 17 对，短，密羽状。后背板长 158，宽 165；刚毛 14 对，由前向后逐次变长；中列毛 D_5～D_8 密羽状，D_5 末端接近或达到 D_6 基部，D_6 末端达到 D_7 基部，D_7 末端达到或超过 D_8 基部，D_8 长 49，末端达到 S_8 基部；S_8 长 11，有 1～2 个小刺；M_{11} 很长，光滑；侧毛 S_5，S_6，M_5 和 M_6 密羽状；S_7，M_7 和 M_8 光滑；后侧突具 1 根毛，稀羽状。背表皮毛 11 对，均在基骨片上，前 4 对密羽状，后 7 对光滑。胸板长（自 St_1 基部水平）71，最狭处宽 56，胸毛 3 对。胸后毛在板后表皮上。生殖板梯形，长 56，后端宽 64，生殖毛 1 对。腹肛板近半圆形，长 116，宽 199，有横行网纹，除围肛毛外有刚毛 6 对，后 2 对较长。Ad 位于肛孔中横线水平，短于肛孔，PA 粗长。生殖板与腹肛板之间有 2 对线形骨片和 2 对表皮毛。足后板 2 对，椭圆形，外侧者大，内侧者小。气门沟前端达到 F_1 基部。头盖 3 突，细长。螯钳动趾 2 齿，定趾有 1 列小齿。颚毛短而光滑。足毛短小。

雄螨：未知。

词源：种名根据新种近似于云囊螨命名。

鉴别特征　新种与云囊螨 Asca nubes Ishikawa, 1969 极近似，根据文献和中国标本比较，2 种有以下区别：新种背板后侧突刚毛稀羽状，而云囊螨为密羽状；新种背毛 D_8（49）长于云囊螨 D_8（福建标本 38）；新种背毛 S_8 长（11）为云囊螨 S_8（福建标本为 4）的 3 倍，并有小刺（云囊螨无小刺）。

正模　♀，采自苔藓，海南万宁东山岭，2005-08-10，林坚贞采。副模 1 ♀，采自树皮下，贵州贵阳森林公园，2006-08-16，林坚贞采。

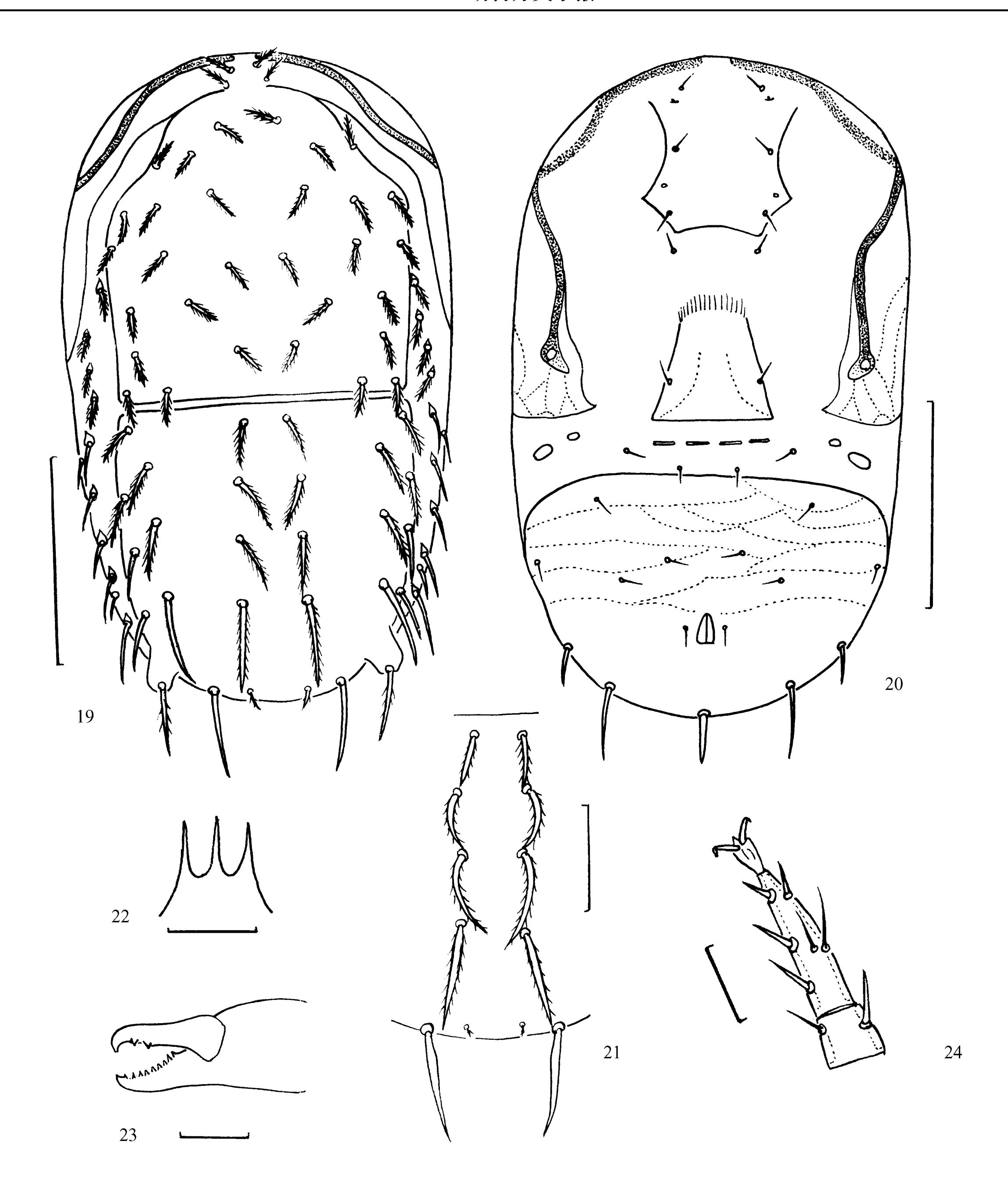


图 19～24 **拟云囊螨，新种** *Asca imitonubes* Ma et Lin，sp. nov.，♀

19. **背面** (dorsum) 20. **腹面** (venter) 21. **后背板中列毛变异** (variations of medial series setae on posterior dorsal shield) 22. **头盖** (tectum) 23. **螯钳** (chela) 24. **跗节 Ⅱ** (tarsus Ⅱ) **比例尺** (scale bars)：19～20 = 100 μm，21 = 50 μm，22～24 = 20 μm

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DESCRIPTIONS OF FIVE NEW SPECIES OF THE GENUS ASCA (ACARI, MESOSTIGMATA, RHODACARIDAE) FROM CHINA

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Abstract Five new species of the genus *Asca* Heyden are described in the present paper. Type specimens are deposited in the Entomology Gallery, Institute of Microbiology and Epidemiology, Academy of Military Medical Sciences, Beijing.

1 *Asca shandongensis* Ma et Lin, sp. nov. (Figs. 1-5)

♀. Anterior dorsal shield 169-184 (av. 174) μm long and 158-176 (av. 169) μm wide, with 17 pairs of leaf-like setae, smooth or rarely pilose. Posterior dorsal shield 161-176 (av. 172) μm long and 169-188 (av. 178) μm wide, with 15 pairs of leaf-like setae, rarely pilose. D_5 and D_6 not reaching base of next setae distally. End of D_7 reaching to base of D_8, end of D_8 distant from base of M_{11}; S_8 very short spiniform, M_{11} long; postero-lateral projection with 2 simple setae, slightly broader and arc-like. Sternal shield with 3 pairs of setae. MSt on cuticle behind the shield. Genital shield with 1 pair of setae. Ventro-anal shield large, transversely oval, with 6 pairs of setae except perianal setae, last 2 pairs longer. Ad situated at level of middle of anus, shorter than anus, PA long. 2 pairs of setae on cuticle before ventro-anal shield. Metapodal shield 1 pair, circular. Peritreme reaching to insertion of F_1 anteriorly. Tectum 3-tined. Movable digit of chela bidentate, fixed digit with 4-5 small denticles.

♂. Unknown.

Etymology. The new species is named after type locality.

The new species is similar to *Asca sinica* Bai et Gu, 1992, but in the new species dorsal setae M_{11} far longer than S_7, only S_7 leaf-shaped; setae on postero-lateral projections simple. In the latter species M_{11} subequal to S_7 in length, both M_{11} and S_7 leaf-shaped; setae on postero-lateral projections pilose.

Holotype ♀, paratypes 3 ♀♀, ex moss, from Mazhuang, Laiwu (36°12′N, 117°39′E), Shandong Province, 16 Sep. 2005, coll. LIN Jian-Zhen.

2 *Asca fujianensis* Ma et Lin, sp. nov. (Figs. 6-8)

♀. Length 274 μm, width 161 μm. Anterior dorsal shield 139 μm long and 131 μm wide, with 17 pairs of simple setae. Posterior dorsal shield 131 μm long and 131 μm wide, with 15 pairs of setae, the tip of D_5 and D_6 not reaching insertion of next setae, D_7 reaching to insertion of D_8, D_8 very long, pilose; S_8 longer, pilose; remains simple, very few long setae weakly pilose; postero-lateral projection with 2 setae. Sternal shield with 3 pairs of setae. MSt on cuticle behind the shield. Genital shield with 1 pair of setae. Ventro-anal shield with 6 pairs of setae except perianal setae, last 2 pairs longer. 2 pairs of minute setae on cuticle between genital and ventro-anal shields. Metapodal shields 2 pairs. Peritreme reaching to insertion of F_1 anteriorly.

♂. Unknown.

Etymology. The new species is named after type locality.

The new species is similar to *Asca kosungensis* Lee, Lee et Ryu, 1997, but in the new species dorsal setae arc-shaped, many setae simple; in the latter species dorsal setae willow leaf-like, barbed.

Holotype ♀, ex leaves litter, from Xinkou, Sanming (26°13′N, 117°36′E), Fujian Province, 15 Oct. 2005, coll. LIN Jian-Zhen. Paratype 1 ♀, ex moss, from Baiyang, Xiapu (26°51′N, 119°58′E), Fujian Province, 17 Sep. 2006, coll. LIN Jian-Zhen.

3 *Asca yunnanensis* Ma et Zhang, sp. nov. (Figs. 9-13)

♀. Length 360 μm, width 244 μm. Anterior dorsal shield 188 μm long and 188 μm wide, with 17 pairs of short setae, all simple but F_1 and F_3 weakly pilose. Posterior dorsal shield 169 μm long and 195 μm wide, with 14 pairs of setae, D_5 short, D_8 longer, S_8 minute, M_{11} the longest; all setae simple but 2 pairs at antero-lateral margins of the shield weakly pilose; postero-lateral projection with 1 seta, strongly pilose. Sternal shield with 3 pairs of setae. MSt on cuticle behind the shield. Genital shield with 1 pair of setae. Ventro-anal shield with 7 pairs of setae except perianal setae, last 2 pairs longer. 1 pair of setae on cuticle before ventro-anal shield. Metapodal shields 2 pairs. Peritreme reaching to insertion of F_1 anteriorly. Tectum 3-tined. Movable digit of chela bidentate, fixed digit with several denticles.

♂. Unknown.

Etymology. The new species is named after type locality.

The new species is similar to *Asca aphidioides* (Linnaeus, 1758), but in the new species many dorsal setae simple, anterior margin of ventro-anal shield convex, in the latter species all dorsal setae pilose, anterior margin of ventro-anal shield straighter.

Holotype ♀, ex moss, from Dianchi Pond, Kunming (25°07′N, 102°38′E), Yunnan Province, 2 Nov. 2005, coll. ZHANG Yan-Xuan. Paratype 1 ♀, ex

soil, from Xiaguan, Dali (25°42′N, 100°14′E), Yunnan Province, 20 Apr. 2007.

4 *Asca hainanensis* Ma et Lin, sp. nov. (Figs. 14-18)

♀. Anterior dorsal shield 161-169 (av. 165) μm long and 158-165 (av. 161) μm wide, with 17 pairs of short simple setae, Posterior dorsal shield 176-188 (av. 182) μm long and 180-184 (av. 182) μm wide, with 15 pairs of setae, many setae simple, very few long setae weakly pilose, D_5-D_7 short, D_8 long and barbed, S_8 longer, M_{11} very long, postero-lateral projection with 2 simple setae. Sternal shield with 3 pairs of setae. MSt on cuticle behind the shield. Genital shield with 1 pair of setae. Ventro-anal shield with 6 pairs of setae except perianal setae, last 2 pairs longer. With cuticle setae 2 pairs between genital and ventro-anal shields. Metapodal shields 1 pair. Peritreme reaching to insertion of F_1 anteriorly. Tectum 3-tined. Movable digit of chela bidentate, fixed digit with 4-5 denticles.

♂. Unknown.

Etymology. The new species is named after type locality.

The new species is similar to *Asca plantaria* Ma, 1996, but in the new species distance between setae D_8 shorter than distance between D_8 and S_7, lateral margins of genital shield straighter; in the latter species distance between D_8 longer than distance between D_8 and S_7, lateral margins of genital shield with small sinus behind Vl_1.

Holotype ♀, paratype 1 ♀, ex leaves litter, from Dongshanling, Wanning (18°49′N, 110°20′E), Hainan Province, 10 Aug. 2005, coll. LIN Jian-Zhen.

5 *Asca imitonubes* Ma et Lin, sp. nov. (Figs. 19-24)

♀. Length 319 μm, width 206 μm. Anterior dorsal shield 158 μm long and 158 μm wide, with 17 pairs of short pilose setae, Posterior dorsal shield 158 μm long and 165 μm wide, with 14 pairs of setae; medial setae D_5-D_8 strongly pilose, D_5-D_7 shorter, D_8 long, S_8 longer and weakly pilose, M_{11} very long, simple; lateral setae S_5, S_6, M_5 and M_6 strongly pilose, S_7, M_7 and M_8 simple; postero-lateral projection with 1 seta, weakly pilose. Sternal shield with 3 pairs of setae. MSt on cuticle behind the shield. Genital shield with 1 pair of setae. Ventro-anal shield broad, with 6 pairs of setae except perianal setae, last 2 pairs longer. Between genital and ventro-anal shield with 2 pairs of line-like sclerites and 2 pairs of cuticle setae. Metapodal shields 2 pairs. Peritreme reaching to insertion of F_1 anteriorly. Tectum 3-tined. Movable digit of chela bidentate, fixed digit with a row of small denticles.

♂. Unknown.

Etymology. Species name after the new species very similar to *Asca nubes* Ishikawa.

The new species very similar to *Asca nubes* Ishikawa, 1969, but seta on postero-lateral projection of the new species weakly pilose, that of the latter species strongly pilose; D_8 of the new species (49 μm) longer than that of the latter species (38 μm, after Fujian specimens); S_8 of the new species (11 μm) longer than that of the latter species (4 μm, after Fujian specimens); S_8 of the new species barbed, that of the latter species simple.

Holotype ♀, ex moss, from Dongshanling, Wanning (18°49′N, 110°20′E), Hainan Province, 10 Aug. 2005, coll. LIN Jian-Zhen. Paratype 1 ♀, under bark of tree, from Forest Park, Guiyang (26°34′N, 106°41′E), Guizhou Province, 16 Aug. 2006, coll. LIN Jian-Zhen.

Key words Acari, Mesostigmata, Rhodacaridae, *Asca*, new species.